DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

IN REPLYING, ADDRESS THE

Communicable Disease Center
Enteric Bacteriology Laboratories
P. O. Box 185
Chamblee, Georgia

September 24, 1954

Dr. Joshua Lederberg
Department of Genetics
University of Wisconsin
Madison 6, Wisconsin

Dear Dr. Lederberg:

As requested, we shall send you some 4,5,12 serum which has a good 5 factor. We do not have an unlimited amount of this and I am sending 15 ml which I hope will be helpful. We do not have the time just now to absorb the serum for you. We are shorthanded and literally snowed under.

I did not reply to your letter sooner or send the serum at an earlier date since your letter was clipped to the back of the manuscript when it reached my desk and it was several days before I read to the last of the paper and found the letter. I hope the delay has not inconvenienced you. As to the preparation of the serum, I used a nonmotile strain treated with alcohol and acetone (Roschka) without heat (just as we make Vi serum). I can send you the culture if you wish but I expect you already have it. - 4937-50

I am interested in the O5 question and we have some peculiar observations. In diagnostic work Miss McWhorter transformed phase 1 of a 4,5,12 strain S. san diego to phase 2 by the use of h (e,h abs. by e,n,x) serum. This serum is actually 5: h. The culture came out 4,12: e,n,z_{15}. On repetition with a single colony culture she got the same result. Cherry then began to pass 4,5,12 forms through 5 serum. Some changed to 4,12 and we thought we had form variation of 5. But 4,5,12 forms were never recovered from 4,12 forms. Just what this all means I do not know. Is this loss variation also a result of phage action? The 5 serum probably contains some phage since it is absorbed with living 4,5,12 culture.

Our 1,w results are encouraging. Miss Davis has gone back to school so we have had to close this work. Of the 13 forms with 1,w antigens, we have transferred antigens to and/or from 8. I am sending a list of the changes accomplished. Your comments will be appreciated. You will note that in each case the results were as would have been predicted. There are apparently two different sorts of 1,w antigen and I suppose one would say two genetic varieties?

Dr. Joshua Lederberg Sept. 24, 1954

I want to send you these phages and the lysogenic and susceptible cultures, more for safe keeping than anything else. Also you may wish to use them sometime. Our experience was that we had to have extremely high titered phages for positive results. If we reached a titre of 8 to 10 plaques at 10^{-8} per loopful we had good results. Although we isolated many phages, only a very few went to that titre. PLT 22 was probably the easiest of all to propagate. Perhaps with your techniques you will be able to obtain results more easily. If we went wrong, I have not been able to tell where our errors occurred.

I am indebted to you for sending the Uetake manuscript. If you have occasion to copy it I would appreciate a carbon. Our secretary doesn't have the time to make a copy just now. I would like very much to work on these problems but I doubt that I will ever find time. There are so many other pressing matters. Bruner and I found it difficult to change 3,10 and 3,15 forms. Only a few trials of many were successful. Now, apparently, it can be done at will. I suppose it is all in knowing how. I wish these Japanese would be a little more specific in describing their methods.

I have not seen Iseki's report of transduction. Was this transfer of H antigens? Bruce Stocker wrote that Iseki had sent him some reprints to be forwarded to me and I understood they would come through you. Do you recall anything on this?

With kindest regards, I am

For the Officer-in-Charge, Bacteriology Section

Sincerely yours,

Phil

Philip R. Edwards, Ph. D.
Bacteriologist-in-Charge
Enteric Bacteriology Unit

Encls.